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Analysis of Motivational Climate, Emotional Intelligence, and Healthy Habits in Physical Education Teachers of the Future Using Structural Equations

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Abstract: This study developed a Structural Equation Model (SEM) in order to identify the associations between motivational climate, emotional intelligence, adherence to the Mediterranean Diet (MD), Physical Activity (PA), and some health indicators in a sample of future teachers. A non-experimental and cross-sectional study was carried in 775 university students (22.22 ± 3.76), using as main scales the Perceived Motivational Climate in Sport Questionnaire (PMCSQ-2), Emotional Intelligence Inventory adapted for the sport context, Physical Activity Questionnaire for Adolescents (PAQ-A), Mediterranean Diet Quality Index (KIDMED), 20 meter Shuttle Run Test (20mSRT), and percentage of lean and fat mass as calculated by the Tanita TBF300®®(Tanita-Corporation, Tokyo, Japan) electronic scale. The results showed a positive association between emotional intelligence and task climate, whereas the relationship with an ego climate was low. Ego-oriented climate was positively related to MD and high levels of PA. Emotional intelligence was directly related to higher levels of PA and the level of adherence to MD. PA was negatively associated with fat mass and positively with lean mass and VO_2MAX. Task-oriented motivational climate showed a positive relation with the emotional intelligence of young people. Ego-oriented motivational climates were related to higher rates of physical-sport engagement and better diet quality.

Keywords: motivational climate; emotional intelligence; Mediterranean diet; physical activity; health indicators; university students

1. Introduction

Research examining the university stage has traditionally focused on academic performance and the teaching–learning process [1,2]. Motivational and emotional factors related to university students have been studied in recent research alongside well-being, with these being related to healthy habits such as following an active lifestyle and a diet of good quality [3]. This problem demands attention during early adulthood as it influences the lifestyle of university students and helps to explain the development of some poor behaviors developed during this period which impact on adult life [4]. Examination of healthy behaviors and habits of Physical Education (PE) teachers of the future must, therefore, be a priority in order to be able to intervene for their prevention.

First, it is important to consider the quality of the diet that is followed by university students. Eating food with high amounts of sugar, fats, or salt, has become a daily habit for young people [5] and produces a neurophysiological process similar to that of abusive drug use [6,7]. In tackling this problem, the scientific literature reveals the importance of promoting the dietary habits associated

with the Mediterranean diet (MD) in order to prevent some diseases [8]. This dietetic model originates from the culture and customs of countries located along the Mediterranean coast, where consumption of foods with high amounts of antioxidants such as olive oil, fruits, legumes, cereals, nuts, and vegetables, as well as to a lesser extent, animal fats, eggs, meat, and fish is traditionally endorsed [9,10]. Further, recent studies show that MD consumption is beneficial to health and is associated with an improved quality of life and a reduced risk of infectious and cardiovascular disease and cancer [9,11]. For this reason, this dietary model should be promoted from the university stage in order to improve lifestyles and prevent various pathologies.

The consumption of a good diet must also be accompanied by non-sedentary lifestyles based on engagement in Physical Activity (PA) or sport [12]. The term PA refers to any body movement that requires energy expenditure with important benefits for health. It is related to a lower risk of hypertension, cardiovascular disease, and diabetes [13], as well as improved bone mineral density, capillarization, and maximum aerobic capacity (VO_2Max) amongst others [14]. In addition, several authors highlight the importance of practicing PA for the improvement of personal well-being and health, and the prevention of disease [15]. For this reason, the World Health Organization (WHO) [16] recommends at least 150 minutes of PA with moderate intensity per week for young people.

At this point, it is interesting to consider some psychosocial aspects that could promote these two healthy habits and which could generate benefits at the physical and psychological levels. In fact, some studies have highlighted how leading a healthy lifestyle decreases mental health problems, improves mood, and favors better emotional regulation, self-esteem, and general well-being [17]. Furthermore, PA and sport engagement are associated with a high number of social behaviors and are influenced by motivational factors [18].

Previous research based on Self-Determination Theory [19] has linked motivation to healthy and unhealthy behaviors. Participants who present high levels of extrinsic motivation can develop inappropriate behaviors such as emotional frustration when they fail to reach their objectives. This can result in stress, anxiety, and even depression, as well as the consumption of harmful substances [20]. As a result, emotional intelligence and the motivational climate in sport are psychological factors which are related to the acquisition and promotion of healthy habits.

The motivational climate in sport has been explained by Achievement Goal Theory [21] and has been used to explain the motivational orientations involved in both sport and education [22]. The motivational climate can be defined as the set of social and contextual signals through which social agents are related, who define the keys to success or failure. In addition, it is the environment created by trainers and teachers in a successful context and it is related to the conception of skills and competence that may predispose one to use certain achievement strategies. In this line, two types of environments can arise depending on the success criteria established [23]. A task-oriented motivational climate is associated with intrinsic and self-determined motivation for physical activity or sport engagement and incorporates the practice of skills directed towards learning and improvement based self-assessments of ability [24]. In contrast, an ego-oriented motivational climate is associated with less self-determined motivations of the extrinsic type, which implies the need to exhibit higher returns and performance outcomes when compared to other individuals [25]. Generally speaking, ego has an authoritarian direction in which personal decisions are not enabled and the evaluation of ability relies on comparisons with others and focuses solely on victory/defeat. Task on the other hand, assumes a less authoritarian linearity in which individuals are allowed to participate in decision making and personal evaluation, and effort and improvement are reinforced [26–28].

Emotional intelligence is a psychosocial factor associated with the capacity to perceive, understand, and develop emotions properly [29]. This construct represents one of the most relevant elements at the university stage [30]. It has been demonstrated that emotional intelligence is of vital importance in the emotional regulation and control of feelings in both educational and sports environments [31]. It also facilitates psychological well-being, decreasing negative emotions, and promotes the creation of healthy behaviors [32–34]. In addition, low levels of emotional intelligence directly impact on the

emergence of harmful habits such as non-active lifestyles, to follow a diet with poor adherence with the Mediterranean model, or the consumption of tobacco and alcohol [3,35]. It is, therefore, essential to promote certain motivational and emotional environments that help form healthy habits and diminish harmful behaviors.

For these reasons, it is interesting to understand the relationships between the motivational climate and emotional intelligence in future teachers of PE. Specifically, it is intended to study the motivational climate generated in the educational context of teaching that they experience in their university studies. It is also relevant to determine the link between these psychosocial factors with healthy habits and the health status of this population. These findings help us to know what motivational orientations in the context of sports practice for teaching and learning should be promoted in the future in order to develop a physically and cognitively stable teaching profile. For this reason, the present research aims to develop a Structural Equation Model (SEM) considering motivational climate, emotional intelligence, healthy habits (MD adherence and PAy), and other health indicators (VO_2Max, lean mass, and fat mass percentages) in PE teachers of the future.

2. Materials and Methods

2.1. Subjects and Design

A non-experimental study with a cross-sectional design was developed using a single measurement using as a main sample a total of 775 students with a PE degree from the autonomous community of Andalusia (Spain). The gender representation was 58.7% (n = 455) for male respondents and 43.1% (n = 320) for female respondents with an age range between 20 and 29 years old (22.22 ± 3.76). Selection criteria of the sample required all participants to be studying for a first Degree in Primary Education with a specialization in PE in one of the eight provinces of Andalusia. According to the data provided by the administrations of the different universities, the students enrolled in courses including a PE specialization in Andalusia totaled 1167 for the 2016/2017 academic year.

2.2. Measures

Motivational climate was evaluated through the Perceived Motivational Climate in Sport Questionnaire (PMCSQ-2), originally developed by Newton, Duda, and Yin [36] and adapted to Spanish by González–Cutre, Sicilia, and Moreno [37]. This scale is composed of 33 items rated on a five-point scale (1 = Strongly disagree; 5 = Strongly agree). This questionnaire is composed of two dimensions which pertain to the subscales: Task-Climate (Cooperative Learning, Effort/Improvement, and Important Role) and Ego-Climate (Punishment of Mistakes, Unequal Recognition, and Member Rivalry). Examination of internal consistency produced an acceptable value for Cronbach's alpha (α = 0.82).

Emotional intelligence was evaluated using the Emotional Intelligence Inventory (IED) [38] adapted for use in a sports context and validated from its original version the Schutte Self Report Inventory (SSRI) [39]. This inventory consists of 30 items that are valued on a Likert scale including five options (1 = Totally disagree; 5 = Totally agree). Items are summed to produce an overall score for the level of general emotional intelligence and for its various dimensions (Emotional Perception, Self-Emotional Management, Hetero-Emotional Management, and Emotional Use). This study produced an excellent Cronbach's alpha of α = 0.91.

Levels of PA were evaluated through the adolescent version of the Physical Activity Questionnaire (PAQ-A) [40] translated to Spanish by Martínez–Gómez et al. [41]. This measure was used to evaluate the level of engagement in PA during the week prior to measure completion. This instrument produced an overall score by summing the 10 items, of which each was scored on a five-point Likert scale where 0 was "Never" and 4 was "Always". An acceptable Cronbach's alpha was obtained in the present study (α = 0.80).

Level of adherence to the MD was assessed through Mediterranean Diet Quality Index (KIDMED) [42]. This scale is composed of 16 dichotomous items which can be answered as "yes" or "no". There are 12 positively-framed and 4 negatively-framed items. In the case of these items, a score is obtained which ranges from −4 to 12. For this scale, an acceptable internal consistency was identified, with a Cronbach's alpha of $\alpha = 0.83$.

The "20 meter Shuttle Run Test (20mSRT)" [43] was used to measure the VO_2MAX. This test consists of running a repeated distance of 20 m at increasing speed, starting with a speed of 8 km/h which increases by 0.5 km/h per minute. The VO_2MAX is indirectly calculated using the participants final speed with the following formula: VO2MAX (ml/min/kg) = (6 × maximal aerobic speed) − 27.4 [44].

The anthropometric measures were carried out in accordance with the guidelines proposed by the International Society for the Advancement of Kinanthropometry [45]. Body composition (percentage of lean mass and fat mass) was calculated using the Tanita TBF300®(Tanita-Corporation, Tokyo, Japan) electronic scale.

2.3. Procedure

Firstly, collaboration with the universities and participants was requested through information packs developed by the department of Didactics of Music, Plastic and Corporal Expression of the University of Granada. Packs were administered to university students enrolled on a Primary Education teaching course with the mention of PE, in one the eight Andalusian provinces. Packs were administered through the different departments of the universities and provided information about the nature and objectives of study. In addition, informed consent was requested to participate in the study. Secondly, students were informed about the data collection process. Specifically, emphasis was placed on: (a) comprehensively reading the questions that made up the questionnaire; (b) not leaving questions without an answer in order to avoid generating experimental deaths in the study; (c) answering as honestly as possible; (d) that the questions related to sports practice referred to situations experienced during their classes of university PE. The tests and scales were applied during university teaching hours without any incentives being offered. In addition, researchers were present to help participants with possible difficulties and to ensure anonymity of the data. Further, the Ethics Committee of the University of Granada approved the study (462/CEIH/2017) and ethical principles established by the Declaration of Helsinki for research were followed.

2.4. Statistical Analysis

The software SPSS®version 22.0 (IBM Corp., Armonk, NY, USA) was used for basis analysis, while the SEM was developed using the software AMOS®version 22.0 (IBM Corp., Armonk, NY, USA). For theses analyses, the Pearson Chi-square test was used and the level of significance was set at 0.05. In addition, the Cronbach's Alpha coefficient was used to establish the internal consistency of the scales, with a confidence interval set at 95.5%. The SEM developed is shown in Figure 1.

The SEM includes two latent variables and twelve observed variables. Furthermore, each observed variable is linked to an error indicator. Task Climate (TC) and Ego Climate (EC) describe the latent variables that are exogenous, being inferred by three indicators for each one. For TC, the indicators are Effort/Improvement (EI), Important Role (IR), and Cooperative Learning (CL), while for EC the indicators are Punishment of Mistakes (PM), Member Rivalry (MR), and Unequal Recognition (UR). General Emotional Intelligence (GEI) acts as an endogenous variable and receives the effect of four indicators: Emotional Perception (EP), Hetero-Emotional Management (HEM), Self-Emotional Management (SEM), and Emotional Use (EU). Finally, Mediterranean Diet Adherence (MD), Physical Activity (PA), Maximal Oxygen Uptake (VO_2MAX), Lean Mass (LM) and Fat Mass (FM) complete the endogenous variables.

Furthermore, bi-directional arrows (covariances) are used to show the relationships between exogenous variables, while uni-directional arrows show the effects between the variables used (direct and indirect). It is important to note that these arrows can be interpreted as multivariate regression coefficients.

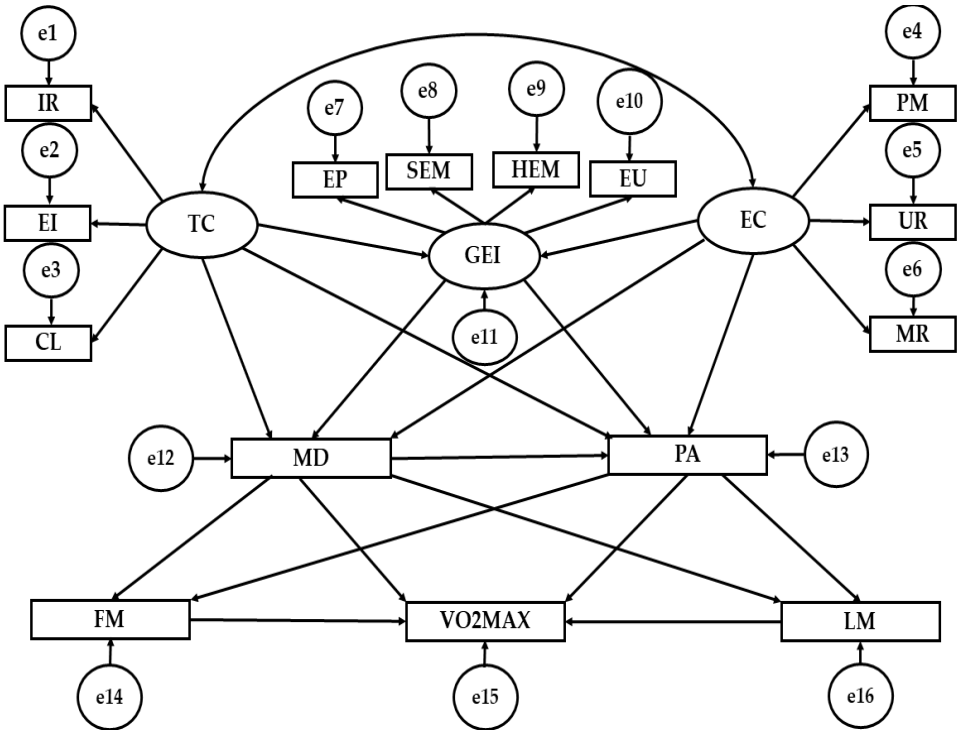

Figure 1. Structural equation model. Note: TC, Task Climate; IR, Important Role; EI, Effort/Improvement; CL, Cooperative Learning; EC, Ego Climate; PM, Punishment of Mistakes; MR, Member Rivalry; UR, Unequal Recognition; GEI, General Emotional Intelligence; EP, Emotional Perception; SEM, Self-Emotional Management; HEM, Hetero-Emotional Management; EU, Emotional Use; MD, Mediterranean Diet; PA, Physical Activity; VO_2MAX, Maximal Oxygen Uptake (mL/min/kg); LM, Lean Mass; FM, Fat Mass.

Model fit was examined by exploring several indices to verify the reliability of the SEM developed [46]. The method of maximum likelihood (ML) was used in order to estimate associations between variables. Chi-squared analysis establishes a good fit for non-significant *p*-values. Moreover, other indices were employed such as the Incremental Fit Index (IFI), the Comparative Fit Index (CFI), and the Normalized Fit Index (NFI). Fit index values higher than 0.90 show an acceptable fit. Finally, the Root Mean Square Error of Approximation (RMSEA) value was determined as being acceptable when it was reported below 0.08.

3. Results

The SEM showed good fit indices. Firstly, chi-square analysis produced a value of $\chi^2 = 538.90$; gl = 77; $p < 0.001$. It is important to point out that this fit index is highly sensitive to sample size, making it essential to consider other standardized indices [46]. Analysis of CFI produced a value of 0.917, IFI analysis yielded a value of 0.918, and NFI analysis obtained a value of 0.903, establishing an acceptable level of fit for the SEM. Moreover, the RMSEA produced a value of 0.071, revealing acceptable fit for this index [46]. These values therefore suggest that the SEM developed fits well to the observed empirical data.

The regression weights for the SEM are showed in Figure 2 and Table 1. In addition, statistically significant ($p < 0.005$) were observed among all indicators of both dimensions of motivational climate. With regards to TC, this was most strongly correlated with IR ($r = 0.88$) and least strongly correlated with EI ($r = 0.82$), with both being positive and direct associations. With regards to EC, UR was the most strongly correlated indicator ($r = 0.93$), with MR being the weakest related ($r = 0.58$) and all relationships being positive and direct. Similarly, statistically significant differences were observed for the indicators of Emotional Intelligence ($p < 0.005$), with all being positively related to the global

dimension. In this case, the highest regression weights are observed for the indicator describing HEM ($r = 0.87$), while the lowest were given for the indicator of EU ($r = 0.73$).

Statistical analysis revealed a negative and indirect relationship between TC and EC ($r = -0.43$; $p < 0.005$). A positive relationship between GEI and TC ($r = 0.60$; $s < 0.005$) and EC ($r = 0.10$; $p < 0.01$) were also shown. No statistically significant differences were observed between TC, MD adherence, and PA engagement. On the other hand, EC was positively related to MD adherence ($r = 0.09$; $p < 0.05$), and PA engagement ($r = 0.158$; $p < 0.005$). Likewise, the same trend was observed for GEI with MD adherence ($r = 0.141$; $p < 0.05$) and PA ($r = 0.241$; $p < 0.005$). Adherence to MD and PA engagement were positively related ($r = -0.206$; $p < 0.005$). Likewise, a positive and direct relationship between MD adherence and FM ($r = 0.14$; $p < 0.005$) was found, while no statistically significant differences with regards to LM were found. Physical activity engagement was negatively related to FM ($r = -0.11$; $p < 0.01$) and positively to LM ($r = 0.84$; $p < 0.05$). Finally, VO_2MAX showed positive and direct associations with PA engagement ($r = 0.18$; $p < 0.005$) and LM ($r = 0.35$; $p < 0.005$), as well as negative and indirect associations with MD adherence ($r = -0.08$; $p < 0.05$) and FM ($r = -0.24$; $p < 0.005$).

Table 1. Regression weights and standardized regression weights.

Relationship Among Variables			Regression Weights				S.R.W
			Estimate	S.E.	C.R.	*p*	Estimate
GEI	←	TC	0.434	0.033	13.264	***	0.603
GEI	←	EC	0.075	0.029	2.539	**	0.103
MD	←	TC	−0.195	0.219	−0.889	0.374	−0.048
MD	←	GEI	0.795	0.278	2.863	*	0.141
MD	←	EC	0.364	0.178	2.044	*	0.088
PA	←	EC	2.189	0.568	3.850	***	0.158
PA	←	TC	0.947	0.694	1.364	0.173	0.069
PA	←	GEI	4.573	0.893	5.122	***	0.241
PA	←	MD	0.693	0.114	6.064	***	0.206
FM	←	MD	0.393	0.100	3.922	***	0.144
LM	←	PA	0.205	0.090	2.277	*	0.084
LM	←	MD	0.485	0.304	1.597	0.110	0.059
FM	←	PA	−0.089	0.030	−2.990	**	−0.109
EI	←	TC	0.827	0.030	27.380	***	0.818
PM	←	EC	1.000	-	-	-	0.773
MR	←	EC	0.882	0.055	16.047	***	0.583
EP	←	GEI	1.000	-	-	-	0.779
SEM	←	GEI	0.857	0.042	20.498	***	0.732
HEM	←	GEI	0.926	0.038	24.165	***	0.866
EU	←	GEI	0.905	0.045	20.317	***	0.726
VO_2MAX	←	MD	−23.372	10.341	−2.260	*	−0.075
VO_2MAX	←	PA	16.428	3.067	5.356	***	0.176
CTAP	←	TC	1.000	-	-	-	0.864
CL	←	TC	1.037	0.034	30.112	***	0.884
UR	←	EC	1.327	0.065	20.260	***	0.929
VO_2MAX	←	LM	13.257	1.211	10.950	***	0.348
VO_2MAX	←	FM	−27.200	3.668	−7.416	***	−0.237
EC	↔	TC	−0.168	0.018	−9.103	***	−0.427

Note: S.R.W., Standardized regression weights; S.E., Standard error; C.R., Critical ratio. TC, Task Climate; IR, Important Role; EI, Effort/Improvement; CL, Cooperative Learning; EC, Ego Climate; PM, Punishment of Mistakes; MR, Member Rivalry; UR, Unequal Recognition; GEI, General Emotional Intelligence; EP, Emotional Perception; SEM, Self-Emotional Management; HEM, Hetero-Emotional Management; EU, Emotional Use; MD, Mediterranean Diet; PA, Physical Activity; VO_2MAX, Maximal oxygen uptake (mL/min/kg); LM, Lean mass; FM, Fat mass. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. ←, relationships between observed variables; ↔, relationships between latent variables.

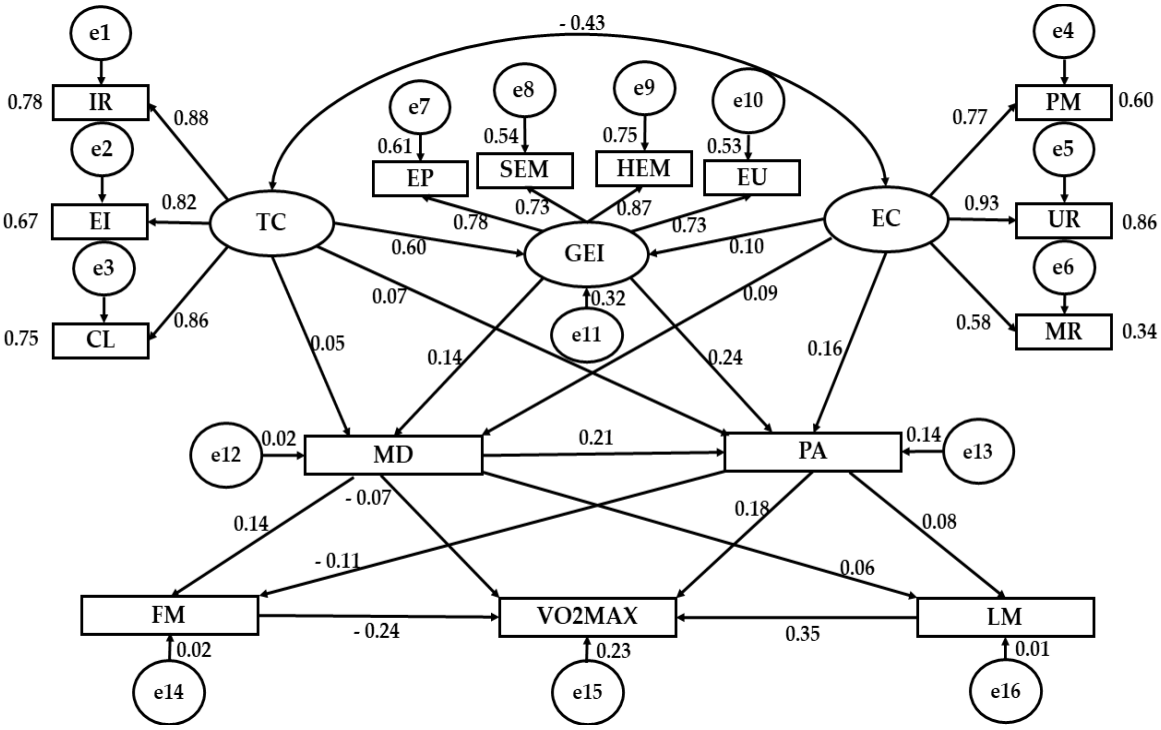

Figure 2. Structural equation model. TC, Task Climate; IR, Important Role; EI, Effort/Improvement; CL, Cooperative Learning; EC, Ego Climate; PM, Punishment of Mistakes; MR, Member Rivalry; UR, Unequal Recognition; GEI, General Emotional Intelligence; EP, Emotional Perception; SEM, Self-Emotional Management; HEM, Hetero-Emotional Management; EU, Emotional Use; MD, Mediterranean Diet; PA, Physical Activity; VO_2MAX, Maximal oxygen uptake (mL/min/kg); LM, Lean mass; FM, Fat mass.

4. Discussion

This study presents an interesting and important explanatory model that considers the associations between motivational climate, emotional intelligence, healthy habits, and health indicators observed in university students enrolled in a PE course. The study is important as the sample used was made up of individuals who will be the professionals of the future in the area of education and health and these individuals will be charged with educating young people in this domain. The present research was conducted to verify the influence of motivation and emotions with regards to health habits and their various indicators. In accordance with this, previous studies have been conducted with similar characteristics but none of these were conducted in this specific population [25,47,48].

A task climate was determined by the indicator Important Role, while the indicator with the least influence was Effort/Improvement. In the case of an Ego Climate, the most relevant indicator was Unequal Recognition. Previous studies such as those carried out by Chu and Zhang [22] or Harwood et al. [49] corroborate the present findings in that they reveal that more self-determined motivational orientations are linked to a higher level of involvement and inclination towards the achievement of goals. Also, it is evident that an ego climate is mainly regulated by actions that involve achieving greater performance and social recognition, due to the extrinsic nature of the motivations involved [23,24]. A clear example of this is the inverse relationship observed between a task-oriented motivational climate and an ego-oriented climate, revealing two clearly differentiated motivational profiles [50].

Emotional intelligence was represented by four basic indicators, with Hetero-Emotional Management being one of the indicators with the greatest inference of global levels of emotional intelligence. It has been shown previously that sport promotes improvements in emotional intelligence. This can be explained by its involvement of adverse situations which need to be overcome, managing euphoria following victory and pessimism and anger following defeat, and the combination of

admiration, insecurity, and frustration. This demands positive regulation in multiple contexts [51]. When considering the relationship between emotional intelligence and the motivational climate, a medium strength correlation with task climate was observed, while regression weights were low with an ego climate. This has been previously shown by Kajbafnezhad et al. [50]. This suggests that task-oriented motivational climates enable improved perceptions, understanding, and emotional regulation [52]. This is due to the better understanding of goals, decreased levels of frustration, involvement of more hedonistic motivations, more positive processes in the acceptance of change, and more positive group influences.

An ego-oriented climate is highlighted to be positively related to MD adherence and engagement in PA. Balaguer et al. [19] state that athletes who are oriented towards performance goals tend to follow a systemized process of more intense training loads, in that they engage in a greater density and volume of training. This may justify the relationship between engagement in PA or sport and ego-oriented motivational climate. Similarly, diet quality is essential for good performance, with a balanced consumption of food groups providing essential nutrients to improve recovery processes after exercise and restore energy reserves [53]. As a result, young people who pursue a higher performance tend to take greater care of their diet, compared to those who engage in PA or sport purely for personal satisfaction [51]. In fact, a direct relationship between diet quality and PA engagement justifies these results, revealing that leading a physically active lifestyle is linked to following a higher quality diet with both behaviors reinforcing positive health habits [54].

In this way, it is observed that university students who better understand and regulate their emotions are those who also pursue a healthier lifestyle [55–57]. Maladaptive behaviors are linked with negative emotional situations such as stress, frustration, depression, and anxiety, which are present in the educational and sport context [58]. Physical activity also generates a sense of pleasure which suppresses the discomfort caused by negative emotions [59].

Physical activity clearly affects a number of health indices such as VO_2MAX and lean mass which increase, and fat mass which decreases, when engagement with PA or sport increases. Several studies have shown the positive effects of exercise on the parameters of cardiac output, alveolar gas exchange, and capillarization [60,61].

In this sense, a task-oriented motivational climate will improve the emotional intelligence of young students and athletes, which helps prevent the development of maladaptive behaviors. Despite this, ego-oriented motivational climates are related to higher rates of PA or sport engagement and greater consideration of diet quality, especially when striving for better sports performance. In summary, it is appropriate to promote motivational orientations that combine both types of motivational climate. This should include working towards achievable and varied tasks, which require an optimal level of effort and involve working cooperatively with teammates and rivals [62].

As final step, it is vital to highlight the main limitations of the present study. The first is associated with the study design because cross-sectional studies do not allow the establishment of cause–effect relationships. This being said, the explanatory model developed does make it possible to better understand associations between variables. Likewise, the study sample can be seen as both a virtue and a limitation of the present study. The disadvantage of the sample in focusing exclusively on individuals who will be the PE teachers of the future, is that data cannot be generalized to the entire university context. Finally, the last limitation of this study is that the motivational climate was measured through the instrument PMCSQ-2 [37]. Given that the motivational climate was considered in PE university classes, it would have been more appropriate to use other scales adapted to this context, such as the Motivational Climate in Physical Education Scale (MCPES) developed by Jaakkola et al. [50]. However, a future line of work can now be developed, with the present study providing a basis to evaluate, compare, and replicate in other groups of students, according to the university degree studied. In addition to this aforementioned future perspective, further research should include other health indicators related to strength and psychosocial factors associated with these habits and mental health, such as psychological well-being, stress, anxiety, depression, self-esteem or body image.

5. Conclusions

The main conclusions of the present study are that a positive relationship with medium strength was found between emotional intelligence and task-oriented climate, showing a low association between emotional intelligence and ego-oriented climate. An ego climate was positively related to MD adherence and PA levels. University students who had a better understanding of their emotions demonstrated higher levels of PA and better adherence to a MD. Physical activity was negatively related to fat mass and positively related to lean mass. Likewise, VO_2max and lean mass were observed to increase, while fat mass decreased with increasing PA or sport engagement. In summary, the promotion of a task-oriented climate was positively associated with high levels of emotional intelligence, a psychosocial factor which is essential for the teaching of PE. Moreover, the ego-oriented climate was related to higher rates of PA or sport engagement and following a better-quality diet, showing a positive relationship too. Thus, it reveals the benefits of promoting the positive components of both motivational orientations in order to create a profile of a healthier and emotionally stabler future teacher.

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References

1. Han, C.; Farruggia, S.; Solomon, B. Latent profiling university students' learning strategies use and effects on academic performance and retention. *High. Educ. Res. Dev.* **2018**, *37*, 1–15. [CrossRef]
2. Samaha, M.; Hawi, N. Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Comput. Hum. Behav.* **2016**, *57*, 321–325. [CrossRef]
3. Kerin, J.; Webb, H.; Zimmer-Gembeck, M. Resisting the temptation of food: Regulating overeating and associations with emotion regulation, mindfulness, and eating pathology. *Aust. J. Psychol.* **2018**, *70*, 167–178. [CrossRef]
4. Cetinkaya, S.; Sert, H. Sakarya University students' fat phobia levels and attitudes towards obese individuals and their correlation with healthy lifestyle behaviours: Knowledge, attitude and practice (KAP) study. *J. Pak. Med. Assoc.* **2018**, *68*, 1358–1362. [PubMed]
5. Beydoun, M.; Powell, L.; Chen, X.; Wang, Y. Food Prices Are Associated with Dietary Quality, Fast Food Consumption, and Body Mass Index among US Children and Adolescents. *J. Nutr.* **2010**, *141*, 304–311. [CrossRef] [PubMed]
6. Ifland, J.; Preuss, H.; Marcus, M.; Rourke, K.; Taylor, W.; Burau, K.; Manso, G. Refined food addiction: A classic substance use disorder. *Med. Hypotheses* **2009**, *72*, 518–526. [CrossRef] [PubMed]
7. Mirkarimi, K.; Mansourian, M.; Kabir, M.; Ozouni-Davaji, R.; Eri, M.; Hosseini, S.; Charkazi, A. Fast food consumption behaviors in high-school students based on the Theory of Planned Behavior (TPB). *Int. J. Pediatr.* **2016**, *4*, 2131–2142. [CrossRef]
8. Sofi, F.; Macchi, C.; Abbate, R.; Gensini, G.; Casini, A. Mediterranean diet and health status: An updated meta-analysis and a proposal for a literature-based adherence score. *Public Health Nutr.* **2014**, *17*, 2769–2782. [CrossRef]
9. Kastorini, C.; Milionis, H.; Esposito, K.; Giugliano, D.; Goudevenos, J.; Panagiotakos, D. The effect of Mediterranean diet on metabolic syndrome and its components: A meta-analysis of 50 studies and 534,906 individuals. *J. Am. Coll. Cardiol.* **2011**, *57*, 1299–1313. [CrossRef]
10. Muros, J.; Cofre-Bolados, C.; Arriscado, D.; Zurita, F.; Knox, E. Mediterranean diet adherence is associated with lifestyle, physical fitness, and mental wellness among 10-y-olds in Chile. *Nutrition* **2017**, *35*, 87–92. [CrossRef]

11. Godos, J.; Marventano, S.; Mistretta, A.; Galvano, F.; Grosso, G. Dietary sources of polyphenols in the Mediterranean healthy Eating, Aging and Lifestyle (MEAL) study cohort. *Int. J. Food Sci. Nutr.* **2017**, *68*, 750–756. [CrossRef] [PubMed]
12. Maselli, M.; Ward, P.; Gobbi, E.; Carraro, A. Promoting Physical Activity Among University Students: A Systematic Review of Controlled Trials. *Am. J. Health Promot.* **2018**, *32*, 1602–1612. [CrossRef] [PubMed]
13. Medina, C.; Janssen, I.; Barquera, S.; Bautista-Arredondo, S.; González, M.; González, C. Occupational and leisure time physical inactivity and the risk of type II diabetes and hypertension among Mexican adults: A prospective cohort study. *Sci. Rep.* **2018**, *8*, 5399. [CrossRef] [PubMed]
14. Niu, Y.; Zhou, D.; Ma, Z. Effect of aerobic exercises on students' physical health indicators. *Sci. Sports* **2018**, *33*, 85–89. [CrossRef]
15. Ahn, S.; Um, Y.; Kim, Y.; Kim, H.; Oh, S.; Lee, C.; Joh, H. Association between Physical Activity Levels and Physical Symptoms or Illness among University Students in Korea. *Korean J. Fam. Med.* **2016**, *37*, 279–286. [CrossRef] [PubMed]
16. World Health Organization (WHO). *Estrategia Mundial Sobre Régimen Alimentario, Actividad Física y Salud*; WHO: Geneva, Switzerland, 2002.
17. Lubans, D.; Richards, J.; Hillman, C.; Faulkner, G.; Beauchamp, M.; Nilsson, M.; Biddle, S. Physical activity for cognitive and mental health in youth: A systematic review of mechanisms. *Pediatrics* **2016**, *138*, e20161642. [CrossRef] [PubMed]
18. Shen, B.; Centeio, E.; Garn, A.; Martin, J.; Kulik, N.; Somers, C.; McCaughtry, N. Parental social support, perceived competence and enjoyment in school physical activity. *J. Sport Health Sci.* **2018**, *7*, 346–352. [CrossRef] [PubMed]
19. Balaguer, I.; Duda, J.; Castillo, I. Motivational Antecedents of Well-Being and Health Related Behaviors in Adolescents. *J. Hum. Kinet.* **2017**, *59*, 121–130. [CrossRef] [PubMed]
20. Usán-Supervía, P.; Murillo-Lorente, V.; Merino-Orozco, A.; Salavera-Bordas, C. Behavioral relationship between motivation and physical self-concept in drug use among adolescent athletes. *Retos-Nuevas Tendencias en Educacion Fisica Deporte y Recreacion* **2018**, *33*, 40–45.
21. Nicholls, J.G. *The Competitive Ethos and Democratic Education*; Harvard University Press: Cambridge, MA, USA, 1984.
22. Chu, T.; Zhang, T. Motivational processes in Sport Education programs among high school students: A systematic review. *Eur. Phys. Educ. Rev.* **2018**, *24*, 372–394. [CrossRef]
23. Curran, T.; Hill, A.; Hall, H.; Jowett, G. Relationships between the coach-created motivational climate and athlete engagement in youth sport. *J. Sport Exerc. Psychol.* **2015**, *37*, 193–198. [CrossRef] [PubMed]
24. Hodge, K.; Gucciardi, D. Antisocial and prosocial behavior in sport: The role of motivational climate, basic psychological needs, and moral disengagement. *J. Sport Exerc. Psychol.* **2015**, *37*, 257–273. [CrossRef] [PubMed]
25. Chacón-Cuberos, R.; Zurita-Ortega, F.; Olmedo-Moreno, E.; Padial-Ruz, R.; Castro-Sánchez, M. An Exploratory Model of Psychosocial Factors and Healthy Habits in University Students of Physical Education Depending on Gender. *Int. J. Environ. Res. Public Health* **2018**, *15*, 2430. [CrossRef] [PubMed]
26. Elliff, H.; Huertas, J. Classroom motivational climate: In search of nuances. *Revista de Psicología* **2015**, *11*, 61–74.
27. González-Valero, G.; Ubago-Jiménez, J.L.; Ramírez-Granizo, I.A.; Puertas-Molero, P. Association between Motivational Climate, Adherence to Mediterranean Diet, and Levels of Physical Activity in Physical Education Students. *Behav. Sci.* **2019**, *9*, 37. [CrossRef] [PubMed]
28. Moreno-Murcia, J.; Sicilia, A.; Sáenz-López, P.; González-Cutre, D.; Almagro, B.; Conde, C. Motivational analysis comparing three contexts of physical activity. *Revista Internacional de Medicina y Ciencias de la Actividad Física y del Deporte* **2014**, *14*, 665–685.
29. Brackett, M.; Rivers, S.; Salovey, P. Emotional intelligence: Implications for personal, social, academic, and workplace success. *Soc. Personal. Psychol. Compass* **2011**, *5*, 88–103. [CrossRef]
30. Cronin, L.; Allen, J.; Mulvenna, C.; Russell, P. An investigation of the relationships between the teaching climate, students' perceived life skills development and well-being within physical education. *Phys. Educ. Sport Pedag.* **2018**, *23*, 181–196. [CrossRef]
31. González-Valero, G.; Zurita-Ortega, F.; Martínez-Martínez, A. Panorama motivacional y de actividad física en estudiantes: Una revisión sistemática. *ESHPA* **2017**, *1*, 41–58.

32. Extremera, N.; Quintana-Orts, C.; Mérida-López, S.; Rey, L. Cyberbullying victimization, self-esteem and suicidal ideation in adolescence: Does emotional intelligence play a buffering role? *Front. Psychol.* **2018**, *9*, 367. [CrossRef]
33. Salguero, J.; Extremera, N.; Fernández-Berrocal, P. Emotional intelligence and depression: The moderator role of gender. *Personal. Individ. Differ.* **2012**, *53*, 29–32. [CrossRef]
34. Puertas-Molero, P.; González-Valero, G.; Sánchez-Zafra, M. Influencia de la práctica físico deportiva sobre la Inteligencia Emocional de los estudiantes: Una revisión sistemática. *ESHPA* **2017**, *1*, 10–24.
35. Adilogullari, I.; Şenel, E. Examination of the relationship between general self-efficacy beliefs, emotional intelligence levels and emotional self-efficacy levels of students in school of physical education and sport. *Anthropologist* **2014**, *18*, 893–902. [CrossRef]
36. Newton, M.; Duda, J.; Yin, Z. Examination of the psychometric properties of the Perceived Motivational Climate in Sport Questionnaire-2 in a sample of female athletes. *J. Sports Sci.* **2000**, *18*, 275–290. [CrossRef] [PubMed]
37. González-Cutre, D.; Sicilia, A.; Moreno, J. Modelo cognitivo-social de la motivación de logro en educación física. *Psicothema* **2008**, *20*, 642–651.
38. Schutte, N.; Malouff, J.; Hall, L.; Haggerty, D.; Cooper, J.; Golden, C.; Dornheim, L. Development and validation of a measure of emotional intelligence. *Personal. Individ. Differ.* **1998**, *25*, 167–177. [CrossRef]
39. García-Coll, V.; Graupera-Sanz, J.; Ruiz-Pérez, L.; Palomo-Nieto, M. Inteligencia emocional en el deporte: Validación española del Schutte self Report Inventory (SSRI) en deportistas españoles. *Cuadernos de Psicología del Deport* **2013**, *13*, 25–36. [CrossRef]
40. Kowalski, K.; Crocker, P.; Donen, R. The physical activity questionnaire for older children (PAQ-C) and adolescents (PAQ-A) manual. *Coll. Kinesiol.* **2004**, *87*, 1–38.
41. Martínez-Gómez, D.; Martínez-De Haro, V.; Pozo, T.; Welk, G.; Villagra, A.; Calle, M.; Veiga, O. Fiabilidad y validez del cuestionario de actividad física PAQ-A en adolescentes españoles. *Revista Española de Salud Pública* **2009**, *83*, 427–439. [CrossRef]
42. Serra-Majem, L.; Ribas, L.; Ngo, J.; Ortega, R.; García, A.; Pérez-Rodrigo, C.; Aranceta, J. Food, youth and the Mediterranean diet in Spain. Development of KIDMED, Mediterranean Diet Quality Index in children and adolescents. *Public Health Nutr.* **2004**, *7*, 931–935. [CrossRef]
43. Rey, O.; Maïano, C.; Nicol, C.; Mercier, C.S.; Vallier, J. Psycho-physiological responses of obese adolescents to an intermittent run test compared with a 20-m shuttle run. *J. Sport. Sci. Med.* **2016**, *15*, 451.
44. Lager, L.; Lambert, J. A maximal multistage 20-m shuttle run test to predict. *Eur. J. Appl. Physiol.* **1982**, *49*, 1–12. [CrossRef]
45. Marfell-Jones, M.; Stewart, A.; De Ridder, J. *International Standards for Anthropometric Assessment*; International Society for the Advancement of Kinanthropometry: Wellington, New Zealand, 2012.
46. Marsh, H. *Handbook of Sport Psychology*; John Wiley & Sons Inc.: New York, NY, USA, 2007.
47. Mak, K.; Jeong, J.; Lee, H.; Lee, K. Mediating Effect of Internet Addiction on the Association between Resilience and Depression among Korean University Students: A Structural Equation Modeling. *Psychiatry Investig.* **2018**, *15*, 962–969. [CrossRef] [PubMed]
48. Respondek, L.; Seufert, T.; Stupnisky, R.; Nett, U.E. Perceived Academic Control and Academic Emotions Predict Undergraduate University Student Success: Examining Effects on Dropout Intention and Achievement. *Front. Psychol.* **2017**, *8*, 243. [CrossRef] [PubMed]
49. Harwood, C.; Keegan, R.; Smith, J.; Raine, A. A systematic review of the intrapersonal correlates of motivational climate perceptions in sport and physical activity. *Psychol. Sport Exerc.* **2015**, *18*, 9–25. [CrossRef]
50. Jaakkola, T.; Wang, C.; Soini, M.; Liukkonen, J. Students' Perceptions of Motivational Climate and Enjoyment in Finnish Physical Education: A Latent Profile Analysis. *J. Sport. Sci. Med.* **2015**, *14*, 477–483.
51. Laborde, S.; Dosseville, F.; Allen, M.S. Emotional intelligence in sport and exercise: A systematic review. *Scand. J. Med. Sci. Sports* **2016**, *26*, 862–874. [CrossRef] [PubMed]
52. Kajbafnezhad, H.; Ahadi, H.; Heidarie, A.; Askari, P.; Enayati, M. Difference between team and individual sports with respect to psychological skills, overall emotional intelligence and athletic success motivation in Shiraz city athletes. *J. Phys. Educ. Sport* **2011**, *11*, 249–254.

53. Wang, J.; Liu, W.; Chatzisarantis, N.; Lim, C. Influence of perceived motivational climate on achievement goals in physical education: A structural equation mixture modeling analysis. *J. Sport Exerc. Psychol.* **2010**, *32*, 324–338. [CrossRef]
54. Burke, L.; Ross, M.; Garvican-Lewis, L.; Welvaert, M.; Heikura, I.; Forbes, S.; Hawley, J. Low carbohydrate, high fat diet impairs exercise economy and negates the performance benefit from intensified training in elite race walkers. *J. Physiol.* **2017**, *595*, 2785–2807. [CrossRef]
55. Yahia, N.; Wang, D.; Rapley, M.; Dey, R. Assessment of weight status, dietary habits and beliefs, physical activity, and nutritional knowledge among university students. *Perspect. Public Health* **2016**, *136*, 231–244. [CrossRef] [PubMed]
56. Kun, B.; Demetrovics, Z. Emotional intelligence and addictions: A systematic review. *Subst. Use Misuse* **2010**, *45*, 1131–1160. [CrossRef] [PubMed]
57. Puertas-Molero, P.; Zurita-Ortega, F.; Chacón-Cuberos, R.; Martínez-Martínez, A.; Castro-Sánchez, M.; González-Valero, G. An Explanatory Model of Emotional Intelligence and Its Association with Stress, Burnout Syndrome, and Non-Verbal Communication in the University Teachers. *J. Clin. Med.* **2018**, *7*, 524. [CrossRef] [PubMed]
58. Claros, E.; Sharma, M. The relationship between emotional intelligence and abuse of alcohol, marijuana, and tobacco among college students. *J. Alcohol. Drug Educ.* **2012**, *56*, 8–77.
59. Lane, A.; Devonport, T.; Soos, I.; Karsai, I.; Leibinger, E.; Hamar, P. Emotional intelligence and emotions associated with optimal and dysfunctional athletic performance. *J. Sport. Sci. Med.* **2010**, *9*, 388.
60. Jäger, K.; Schmidt, M.; Conzelmann, A.; Roebers, C. Cognitive and physiological effects of an acute physical activity intervention in elementary school children. *Front. Psychol.* **2014**, *5*, 1473. [CrossRef]
61. Zurita-Ortega, F.; Chacón-Cuberos, R.; Castro-Sánchez, M.; Gutiérrez-Vela, F.; González-Valero, G. Effect of an intervention program based on active video games and motor games on health indicators in university students: A pilot study. *Int. J. Environ. Res. Public Health* **2018**, *15*, 1329. [CrossRef] [PubMed]
62. Castro-Sánchez, M.; Zurita-Ortega, F.; Chacón-Cuberos, R.; López-Gutiérrez, C.; Zafra-Sántos, E. Emotional Intelligence, Motivational Climate and Levels of Anxiety in Athletes from Different Categories of Sports: Analysis through Structural Equations. *Int. J. Environ. Res. Public Health* **2018**, *15*, 894. [CrossRef]